

CLAIMS

What is claimed is:

1. A turbofan with a drive motor, comprising:
 - a shroud;
 - a rotating plate coupled at a center thereof to a shaft of the drive motor; and
 - a plurality of blades radially arranged on a peripheral area of a front face of the rotating plate, in which each of the plurality of blades includes a first blade part integrally formed with the shroud and extending toward the rotating plate with an end thereof having a first plane surface, and a second blade part integrally formed with the rotating plate and extending toward the shroud with an end thereof having a second plane surface corresponding to the first plane surface of the first blade part, the respective first and second blade parts being joined to each other at the corresponding first and second plane surfaces by fusion bonding.
2. The turbofan as set forth in claim 1, wherein the first plane surfaces of the ends of the first blade parts are formed to be parallel to the front face of the rotating plate.
3. A turbofan with a drive motor, comprising:
 - a rotating plate coupled at a center thereof to a shaft of the drive motor;
 - a plurality of blades radially arranged on a peripheral area of a front face of the rotating plate, in which rear ends of the plurality of blades have plane surfaces corresponding to the front face of the rotating plate and are joined to the front face of the rotating plate by fusion bonding; and

a ring-shaped shroud integrally formed with front ends of the plurality of the blades.

4. A method of manufacturing a turbofan including a rotating plate coupled at a center thereof to a shaft of a drive motor, a plurality of blades radially arranged on a peripheral area of a front face of the rotating plate, and a ring-shaped shroud coupled to front ends of the plurality of the blades, comprising:
forming the ring-shaped shroud and first parts of the plurality of blades integrally;
forming the rotating plate and second parts of the plurality of blades integrally; and
joining the first parts of the plurality of blades to corresponding second parts of the plurality of blades by fusion bonding.

5. The method as set forth in claim 4, wherein first ends of the first parts of the plurality of blades and second ends of the second parts of the plurality of blades have plane surfaces, the plane surfaces of respective first and second ends corresponding to each other.

6. The method as set forth in claim 5, wherein the first ends of the first parts of the plurality of blades and the second ends of the second parts of the plurality of blades have the plane surfaces parallel to the front face of the rotating plate.

7. A method of manufacturing a turbofan including a rotating plate coupled at a center thereof to a shaft of a drive motor, a plurality of blades radially arranged on a peripheral area of a front face of the rotating plate, and a ring-shaped shroud coupled to front ends of the plurality of blades, comprising:

forming the ring-shaped shroud and the plurality of blades integrally, in which ends of the plurality of blades have plane surfaces corresponding to the front face of the rotating plate; and joining the ends of the plurality of blades to the front face of the rotating plate by fusion bonding.

8. A turbofan with a drive motor, comprising:
 - a shroud;
 - a rotating plate coupled to the drive motor to rotate the rotating plate; and
 - a plurality of blades radially arranged on the rotating plate, each of the plurality of blades comprises:
 - a first blade part integrally formed with the shroud, and
 - a second blade part integrally formed with the rotating plate such that the first blade part extends toward the rotating plate and the second blade part extends toward the shroud, the respective first and second blade parts of each of the plurality of blades being joined to each other.
9. The turbofan as set forth in claim 8, wherein the respective first and second blade parts of each of the plurality of blades include first and second plane surfaces at corresponding ends of the first and second blade parts, respectively, to bond the corresponding ends of the first and second blade parts.
10. The turbofan as set forth in claim 9, wherein each of the plane surfaces is formed to be parallel to a front face of the rotating plate.

11. A turbofan with a drive motor, comprising:
a shroud;
a rotating plate coupled to the drive motor to rotate the rotating plate; and
a plurality of blades radially arranged on a front face of the rotating plate, each of the plurality of blades comprises:

front and rear ends such that the rear end of each of the plurality of blades has a plane surface corresponding to the front face of the rotating plate and is joined to the front face of the rotating plate and the front end of each of the plurality of blades is integrally formed with the shroud.

12. A method of making a turbofan including a shroud, a rotating plate, and a plurality of blades radially arranged on a front face of the rotating plate, the shroud being coupled to front ends of the plurality of the blades, comprising:

integrally molding the shroud and first parts of the plurality of blades;
integrally molding the rotating plate and remaining second parts of the plurality of blades; and
joining corresponding first and second parts of the plurality of blades to each other.

13. The method as set forth in claim 12, wherein each of the first and second ends parts have plane surfaces, the plane surfaces of the corresponding first and second parts corresponding to each other.

14. The method as set forth in claim 12, wherein the joining of the corresponding first and second parts is by fusion bonding.

15. The method as set forth in claim 13, wherein each of the plane surfaces are parallel to the front face of the rotating plate.

16. A method of making a turbofan including a shroud, a rotating plate, and a plurality of blades radially arranged on a front face of the rotating plate, the shroud being coupled to front ends of the plurality of blades, comprising:

integrally molding the shroud and the plurality of blades, the front ends of the plurality of blades having plane surfaces corresponding to the front face of the rotating plate; and
joining the front ends of the plurality of blades to the front face of the rotating plate.

17. A turbofan , comprising:

a first turbofan part including a shroud and first blade parts integrally formed with the shroud;
a second turbofan part including a rotating plate and second blade parts integrally formed with the rotating plate, corresponding first and second blade parts being joined to each other at respective plane surfaces.

18. A method of making a turbofan including first and second mold products, the first mold product including a shroud and first blade parts integrally formed with the shroud and the second mold product including a rotating plate and second blade parts integrally formed with the rotating plate, comprising:

joining corresponding first and second blade parts of the first and second mold products to each other at respective plane surfaces thereof.

19. A mold for making a turbofan, comprising:

first and second mold parts, the first mold part integrally forming a first mold product including a shroud part and first blade parts and the second mold part integrally forming a second mold product including a rotating plate part and second blade parts such that the turbofan is formed by joining corresponding first and second blade parts of the first and second mold products to each other at respective plane surfaces thereof.